Listing of claims:

1.(Currently Amended) An apparatus for automatically determining a type of each load coupled to an amplified A channel signal and an amplified B channel signal and automatically configuring the amplification of the A and B channel signals to drive each determined load type, comprising:

~~(a)~~ a first configuration of amplifiers, a first amplifier and a second amplifier are arranged to generate an amplified A channel signal between a first output of the first amplifier and a second output of the second amplifier, wherein the first and second outputs are adapted for driving a load of a first type coupled there between, and a third amplifier and a fourth amplifier are arranged to generate an amplified B channel signal between a third output of the third amplifier and a fourth output of the fourth amplifier, wherein the third and fourth outputs are adapted for driving another load of the first type coupled there between;

~~(b)~~ a second configuration of the amplifiers, the first and second amplifiers are arranged to generate the amplified A channel signal between the first and second outputs, wherein the first and second outputs are adapted for driving a load of a second type coupled there between, wherein the first type is different from the second type, and the second amplifier and the third amplifier are arranged to generate the amplified B channel signal between the second output and the third output, wherein the second and third outputs are adapted for driving another load of the second type coupled there between; ~~and~~

~~(c)~~ a control circuit that automatically determines the type of loads coupled to the amplified A and B channel signals and automatically employs the determined load type to select an arrangement of the amplifiers in one of the first configuration and the second configuration, wherein the selected arrangement of amplifiers provides an appropriate level for the amplified A and B channel signals to drive their respective loads; and

a switch that is arranged to: couple the first output to an input of the second amplifier when in a closed position, and disconnect the first output from the input of the second amplifier when in an open position, wherein the switch is selectively controlled by the control circuit such that the switch is closed when the selected arrangement of the amplifiers is the first configuration, and the switch is open when the selected arrangement is the second configuration.

2. (Currently Amended) An apparatus as in Claim 1, further comprising a first mechanical switch that couples one of the first and second outputs to the load of the first type when in a closed position, and disconnects the one of the first and second outputs from the load of the first type when in an open position, ~~and~~ wherein the control circuit automatically determines the type of load to be of the first type when the first mechanical switch is detected as closed, and of the second type when the first mechanical switch is detected as open.

3. (Currently Amended) An apparatus as in Claim 1, further comprising a second mechanical switch that couples the third output to an input of the control circuit when in a closed position, and disconnects the third output from the input of the control circuit when in an open position, wherein the control circuit detects the type of load by detecting the disposition of the second mechanical switch as the open position or the closed position.

4. (Original) An apparatus as in Claim 1, wherein the fourth amplifier includes a tri-state input that is coupled to the control circuit such that the fourth amplifier is enabled when the selected arrangement of the amplifiers in the first configuration, and the fourth amplifier is disabled when the selected arrangement is the second configuration.

5. (Cancelled)

6. (Original) An apparatus as in Claim 1, wherein the first amplifier and the second amplifier are configured as a bridge amplifier such that the first output and second output provide an A channel differential output, and the third amplifier and the fourth amplifier are configured as another bridge amplifier such that the third output and the fourth output provide a B channel differential output, when the selected arrangement is the first configuration.

7. (Original) An apparatus as in Claim 1, wherein the second output of the second amplifier provides a virtual ground, the first output of the first amplifier provides an A channel output, and the third output of the third amplifier provides a B channel output, when the selected arrangement is the second configuration.

8. (Original) An apparatus as in Claim 1, wherein the control circuit is adapted for detecting a disposition of a jack having a mechanical switch, the mechanical switch being disposed in a closed position unless a plug is inserted therein, and the mechanical switch being in an open position when a plug is inserted therein such that the control circuit determines the disposition of the jack by monitoring the disposition of the mechanical switch.

9. (Original) An apparatus as in Claim 1, wherein each of the first, second, and the third amplifiers include a controllable current limited output that is enabled in the selected arrangement is the second configuration.

10. (Original) An apparatus as in Claim 9, wherein each of the controllable current limited outputs of the first, second, and third amplifiers includes an output transistor that generates an output current in response to a drive signal, and a controlled clamp that is arranged to clamp the drive signal when the selected arrangement is the second configuration.

11. (Original) An apparatus as in Claim 1, wherein the control circuit further comprises a short circuit detector, the short circuit detector determines that a short circuit condition exists when the second output is maintained below the reference voltage for a predetermined time interval, and the control circuit disables the second amplifier when the short circuit condition exists.

12. (Original) A method for dynamically configuring an amplifier with a jack, comprising:
automatically setting a first mode when the jack is empty;
automatically setting a second mode when a plug is inserted in the jack;

when in the first mode, differentially driving a first load coupled between a first output of a first amplifier and a second output of a second amplifier and differentially driving a second load coupled between a third output of a third amplifier and a fourth output of a fourth amplifier; and

when in the second mode, driving a series coupled third and fourth load between the first and third outputs and generating a ground potential at the second output that is coupled through the jack to a common point between the third and fourth loads.

13. (Original) An apparatus for monitoring a jack for a plug insertion, the jack having a first terminal driven by a signal and a second terminal that is separably coupled to the first terminal, the second terminal of the jack is decoupled from the first terminal when a plug is inserted into the jack, comprising:

a first circuit that couples a supply voltage to the second terminal when the plug is in the jack;

a compare circuit that generates a compare signal responsive to a comparison of the signal to a potential of the second terminal;

an enable circuit that generates an enable signal when the signal is determined to be different from the supply voltage by a predetermined amount; and

a memory circuit that stores the compare signal when enabled by the enable signal such that the memory circuit produces an output signal indicating the disposition of the plug in the jack.

14. (Original) An apparatus as in claim 13, wherein the first circuit includes a transistor that is biased to provide a path between the power supply voltage and the second terminal.

15. (Original) An apparatus as in Claim 13, wherein the enable circuit further comprises:

a first reference voltage circuit that generates a first reference voltage that is different from the power supply voltage by a predetermined amount; and

a first comparator circuit that compares the signal to the first reference voltage to generate an enable signal, the enable signal indicating that the signal different from the power supply voltage by at least the predetermined amount.

16. (Original) An apparatus as in Claim 13, wherein the compare circuit produces a first output when the potential of the signal is the same as the potential of the second terminal, and the compare circuit produces a second output when the potential of the signal is different from the potential of the second terminal.

17. (Original) A method of monitoring a jack for a plug insertion, the jack having a first terminal driven by a signal and a second terminal that is separably coupled to the first terminal, the second terminal of the jack is decoupled from the first terminal when a plug is inserted into the jack, comprising:

coupling the second terminal to a power supply voltage when the jack is inserted;

generating a compare signal responsive to a comparison of the signal to a potential of the second terminal; and

storing the compare signal in a memory when the signal is different from the power supply voltage by a predetermined amount.

18. (Original) An apparatus for monitoring a jack for a plug insertion, the jack having a first terminal driven by a signal and a second terminal that is separably coupled to the first terminal, the second terminal of the jack is decoupled from the first terminal when a plug is inserted into the jack, comprising:

means for coupling the second terminal to a power supply voltage when the jack is inserted;

means for generating a compare signal responsive to a comparison of the signal to a potential of the second terminal; and

means for storing the compare signal in a memory when the signal is different from the power supply voltage by a predetermined amount.

19. (Original) An apparatus for automatically disabling amplification of a signal until steady state amplification is available, including:

(a) a first amplifier that includes an input, a reference input and an output, the input is coupled to the signal;

(b) a second amplifier that includes a reference input, a control input and an output; wherein the outputs of the first and second amplifiers are adapted for driving a load there between;

(c) a reference circuit that generates a reference voltage that is coupled to the reference inputs of the first and second amplifiers, the reference voltage transitions from a start voltage to a final voltage during a first time period; and

(d) a control circuit that controls the functional operation of the second amplifier, including:

(i) disabling the second amplifier from providing a return path for the load during the first time period to prevent the introduction of transient effects into the load; and

(ii) when the first time period is over and when the signal exceeds a predetermined amount, the control circuit enables the second amplifier to provide steady state amplification of the signal such that transient effects are further minimized into the load.

20. (Original) An apparatus as in Claim 19, further comprising a feedback circuit that is coupled between the input and the output of the first amplifier, and the control circuit is arranged to monitor the feedback circuit to determine when the signal exceeds the predetermined amount.

21. (Original) An apparatus as in Claim 20, wherein the feedback circuit includes a resistor and the control circuit monitors a voltage difference across the resistor such that the polarity and magnitude of the voltage difference indicates when the signal has exceeded the predetermined amount.

22. (Original) An apparatus as in Claim 19, further comprising a feedback switch that is arranged to couple the input of the first amplifier to the output of the first amplifier when closed, and the

control circuit is adapted to close the switch during the first time period and open the switch after the first time period.

23. (Original) An apparatus as in Claim 19, wherein the reference circuit further comprises:

a voltage generator circuit that generates a first voltage at a first node;

a controlled current source that sources a current into a second node when enabled;

a compare circuit that is arranged to compare the voltage at the first node to a voltage at the second node and produces a control signal having one of a first state and a second state, the first state indicating that the second voltage is substantially different from the first voltage, the second state indicating that the second voltage is substantially the same as the first voltage; and

the control signal enables the controlled current source when the control signal is in the first state and disabled the controlled current source when the control signal is in the second state.

24. (Original) An apparatus as in Claim 23, further comprising a feedback switch that is arranged to couple the input of the first amplifier to the output of the first amplifier when closed, the control signal from the reference circuit is arranged to close the feedback switch when the control signal is in the first state, and the control signal from the reference circuit is arranged to open the feedback switch when the control signal is in the second state.

25. (Original) An apparatus for automatically disabling amplification of an input signal until steady state amplification is available, including:

means for amplifying the input signal to generate a first output;

second means for amplifying to generate a second output, the first and second means for amplifying are adapted for driving a load between the first output and the second output;

means for generating a reference produces a reference voltage that transitions from a start voltage to a final voltage over a first time period; and

means for determining that the reference voltage is the same as the final voltage, indicating an end of the first time period;

means for sensing an input signal after the end of the first time period, the means for sensing indicating that the input signal exceeds a predetermined amount; and

means for disabling the second means for amplifying until the means for sensing indicates that the input signal has exceeded the predetermined amount after the end of first time period such that the second means for amplifying is prevented from providing a conduction path through the load when the second means for amplifying is disabled.

26. (Original) A method for automatically disabling amplification of an input signal until steady state amplification is available, including:

detecting a start-up transient period where a reference voltage is different from a final voltage;

disabling a sense circuit during the start-up transient period;

monitoring a voltage difference across a feedback resistor with the sense circuit when enabled, the feedback resistor being connected between an input and output of a first amplifier;

disabling a second amplifier in the start-up transient period such that there is substantially no conduction path through a load; and

enabling the second amplifier after the start-up transient period when the voltage difference across the feedback resistor exceeds a predetermined amount indicating that an input signal is available wherein an amplified signal is only driven through the load after start-up transients have concluded and an input signal is available.

27. (Original) An apparatus for automatically disabling amplification of a first signal and a second signal until steady state amplification is available, including:

(a) a first amplifier that includes an input, a reference input and an output, the input is coupled to the first signal;

(b) a second amplifier that includes a reference input, a control input and an output; wherein the outputs of the first and second amplifiers are adapted for driving a load there between;

(c) a third amplifier that includes an input, a reference input and an output, the input is coupled to the second signal;

(d) a fourth amplifier that includes a reference input, a control input and an output; wherein the outputs of the third and fourth amplifiers are adapted for driving another load there between;

(e) a reference circuit that generates a reference voltage that is coupled to the reference inputs of the first, second, third and fourth amplifiers, the reference voltage transitions from a start voltage to a final voltage during a first time period; and

(f) a control circuit that controls the functional operation of the second, and fourth amplifiers, including:

(i) disabling the second and fourth amplifiers from providing a return path for each respective load during the first time period to prevent the introduction of transient effects into the respective loads;

(ii) when the first time period is over and when either one of the first signal and the second signal exceeds a predetermined amount, the control circuit enables the second and fourth amplifiers to provide steady state amplification of the signals such that transient effects are further minimized into the loads.

28. (Original) An apparatus for automatically disabling amplification of a first signal and a second signal until steady state amplification is available, including:

(a) a first amplifier that includes an input, a reference input and an output, the input is coupled to the first signal;

(b) a second amplifier that includes a reference input, a control input and an output; wherein the outputs of the first and second amplifiers are adapted for driving a load there between;

(c) a third amplifier that includes an input, a reference input and an output, the input is coupled to the second signal;

(d) a reference circuit that generates a reference voltage that is coupled to the reference inputs of the first, second, and third amplifiers, the reference voltage transitions from a start voltage to a final voltage during a first time period;

(e) a first switch coupling the input of the input of the first amplifier to the input of the third amplifier when closed;

(f) a second switch coupling the output of the first amplifier to the output of the third amplifier when closed; and

(g) a control circuit that controls the functional operation of the second amplifier, the third amplifier, and the first switch, including:

(i) disabling the second and third amplifiers and closing the second switch to prevent the load from conducting during the first time period, preventing the introduction of transient effects into the respective loads;

(ii) closing the first switch to configure the first amplifier as a summing amplifier during the first time period;

(iii) when the first time period is over and when either one of the first signal and the second signal exceeds a predetermined amount, the control circuit enables the second and third amplifiers, and opens the first and second switches to provide steady state amplification of the signals such that transient effects are further minimized into the loads.